

# NATIONAL IMAGINATION COMPUTER CLUB

\* 515 Shadylane-Barrington-Illinois-60010

NOVEMBER/DECEMBER 1982

URGENT ! IMPORTANT ! LAST CHANCE ! ACT NOW

1. Join the ALL NEW, GREATLY IMPROVED 1983 COMPUTER CLUB before 12/25/82 for ONLY \$10.00 - SAVE \$5.00. If you don't send in your club application before 12/25/82, you won't get the SUPER-DUPER JANUARY 1983 CLUB LETTER!! It will also cost you \$15.00 to join after 12/25/82.
2. LAST CHANCE to buy programs and peripherals from Protecto Enterprises at CLOSE OUT PRICES!! Limited quantities are available!
3. New improved sales and service for APF Computer Owners!!!

Jim and Milly Brewer - Box 1411, Springdale, Arkansas 72764  
Phone 501-756-6394 - will provide complete support after 12/25/82:

- a. They will handle ALL service- send your computer to Jim Brewer - 1403 Willard, Springdale, Arkansas 72764 - UNITED PARCEL SERVICE PREPAID.
- b. They will stock and sell all programs and peripherals for the APF computer.
- c. They will also provide NEW PROGRAMS and EXPANSION CAPABILITIES.

YOU'LL FEEL LIKE A MILLION!!!!

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ANSWERS/TIPS/QUESTIONS FROM OTHER CLUB MEMBERS

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FROM BILL LINQUIST OF WYOMING, MICHIGAN

In the June, 1982 newsletter, there is a letter on how to modify the MPA-10 for 16K of RAM. The letter is apparently based on the theory, since it doesn't work as presented. I will now explain how I did this modification. (The club apologizes to all members who tried this modification, we were unable to test it prior to publication.)

Set the MPA-10 upside down on your work surface and remove the screws which hold the bottom of the case on. After removing the case bottom, remove the screws which hold the main circuit board in place. Un-solder the ground strap that comes from the cassette, where it attaches to the main board cover. Unplug the four plugs which attach the board to the cassette and keyboard. Remove the board from the MPA-10 case and set the case aside. Next, remove the metal shields from the circuit board. The top shield can be removed by straightening the bent tabs. The bottom shield must be un-soldered.

The description of what chips are necessary is correct. You just need to remove the 8K chips and install the 16K versions. I installed a 14 pin socket (Radio Shack #276-1999) in the open area to the right of U4 and U5. The whole board is grounded here so you need to remove the conducting surfaces on both sides of the board. I drilled the 14 holes using a piece of project board as a guide.

Using wire wrap wire, I ran 5 volts to pin 14 of the new socket from pin 16 of U5. Pin 7 of the new socket should go to the ground. I did not cut the foil away from that pin, so all I had to do was solder it to the foil.

The chip which goes in this new socket is a 74LS08, also available from Radio Shack. As described in the June article, the inputs to this AND gate (pins 4 & 5) should go to pins 10 and 11 of U5. This is very easy to do with wire wrap wire since U5 is only about 1 1/2 inches away from the new socket. Pin 6 of the new socket goes to resistor R6. I did this connection by un-soldering the end of R6 nearest the metal shield and lifting it up. I then soldered a piece of wire wrap wire to the lifted end of the resistor. I ran this wire through a hole already in the board near the new chip and connected the other end to pin 6 of the new chip.

So far this is exactly what was covered in the June article. There is one more thing to do before the new memory will work. The jumper which either sent ground or +5 to pin 10 of U3 must be removed and replaced with another jumper to supply pin 10 of U3 with the BA13 signal. First remove the jumper that is to the left of U6. The new jumper, soldered to the underside of the board, should go from the old jumper connection nearest to the memory chips, to pin 26 of the J connector socket. Looking at the underside of the board, this is the third pin on the top row of the J connector socket. There is a handy hole just to the left of the socket which is connected to this pin. You can use an ohm meter to verify that this is the same connection that goes to pin 1 of U7.

You are now done. Put the MPA-10 back together. I didn't bother to re-solder the cover. I don't think it is necessary, and if you did goof, it would be one more thing you would have to do to make corrections. You should re-solder the ground strap, however.

I have made one other change to my APF computer. I have built a modification for the MP-1000 which causes the computer to go into a new monitor if a program crashes or you press the reset key. It means that you no longer loose your BASIC or machine language programs if an error occurs. The monitor has many features which are usable by both BASIC and machine language programmers. It is really great to no longer see "APF BASIC" appear if I forget a ")" on a BASIC statement. Now I get a different cursor, press one key, and go back to BASIC with my program still there. This MP-1000 modification should be available soon from Bob Eisman.

After you have completed the 16K modification, you will notice that your BK tapes don't load correctly. This is because the computer wants to load all of RAM from tape. To get around this problem, poke 41446,191. Load your tape, poke 41446,223, and re-save your program. Memory locations 41446 and 41447 are used by the APF as indicated end of memory. When you save or load a tape, the APF looks at these locations to determine how much memory to load or save.

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PROGRAMS FROM OTHER CLUB MEMBERS

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SQUARE ROOT ONLY

..... FROM JOHN PIERCE OF CLAYTON, UTAH

```
10 INPUT "NUMBER = ",N
20 IF N<=0 GOTO 10
30 X=1
40 X=.5*(X+N/X)
50 IF ABS (X*X/N-1)<.0001 GOTO 70
60 GOTO 40
70 PRINT "THE SQUARE ROOT OF "N;" IS "X
80 END
```

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SQUARE & CUBE ROOTS

.....ALSO FROM JOHN PIERCE

```
10 INPUT "NUMBER = ",X
20 INPUT "ROOT (2 OR 3) = ",R
30 INPUT "# OF DECIMAL PLACES OF ACCURACY",S
40 IF R<0 PRINT "ROOT MUST BE 0 OR LARGER": GOTO 10
50 IF R=0 THEN P=1: GOTO 140
60 P=X/R
70 FOR Y=1 TO 100
80 Z=P
90 RR=R-1
100 P=(X/P^RR+RR*P)/R
110 IF ABS (Z-P)/(ABS (A)+ABS (P))<.001 GOTO 130
120 NEXT Y
130 P=INT (P*10^S+.5)/INT (10^S+.5)
140 PRINT "THE "R;" ROOT OF "X;" IS "P
150 END
```

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SHAPE  
..... from CHUCK RATHBERG of Virginia

This program will demonstrate all of the lo-resolution graphics  
shapes and paints them in all colors, one shape at a time.

FF

```
1 REM -CHUCK RATHBERG
10 CALL 17046
20 POKE 24578,54
30 FOR S=1 TO 15
40 SHAPE =S
50 FOR C=0 TO 8
60 COLOR =C
70 FOR X=0 TO 31
80 FOR Y=0 TO 15
90 PLOT X,Y
100 NEXT Y: NEXT X: NEXT C
110 CALL 17046
120 NEXT S
```

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SNAKE  
..... from RON ROADY of Oxnard, California

```
1 POKE 24578,38
2 REM -RON ROADY
5 CALL 17046
10 ,DIM R$(1): DIM L$(1)
15 PRINT "DON'T SIT STILL!!!": PRINT "YOU MUST KEEP MOVING!!!": PRINT "PRESS RE
TURN KEY WHEN READY": INPUT S
20 SHAPE =15: CALL 17046
30 XA=31:YA=0:XB=0:YB=15:RC=-3:LC=-3:RFLAG=0:LFLAG=0
40 X1=XA:Y1=YA:X2=XB:Y2=YB
44 IF RC=2ANDLC=2 THEN PRINT "NOBODY WINS": GOTO 530
45 IF RC=2 THEN PRINT "RED WINS": GOTO 510
46 IF LC=2 THEN PRINT "BLUE WINS": GOTO 510
50 R$= KEY$(1):L$= KEY$(2)
100 IF R$="N" THEN YA=Y1-1: IF YA<0 THEN YA=0
110 IF R$="S" THEN YA=Y1+1: IF YA>15 THEN YA=15
120 IF R$="E" THEN XA=X1+1: IF XA>31 THEN XA=31
130 IF R$="W" THEN XA=X1-1: IF XA<0 THEN XA=0
150 IF L$="N" THEN YB=Y2-1: IF YB<0 THEN YB=0
160 IF L$="S" THEN YB=Y2+1: IF YB>15 THEN YB=15
170 IF L$="E" THEN XB=XB+1: IF XB>31 THEN XB=31
```

## SHAPE (continued)

```

180 IF L$="W" THEN XB=XB-1: IF XB<0 THEN XB=0
200 IF PEEK (512+YA*32+XA)<>128 THEN XA=X1:YA=Y1:RC=RC+1: GOTO 210
205 RC=0
210 IF PEEK (512+YB*32+XB)<>128 THEN XB=X2:YB=Y2:LC=LC+1: GOTO 300
220 IF XB=XAANDYB=YA THEN XB=X2:YB=Y2: GOTO 300
225 LC=0
300 COLOR =2: PLOT XA,YA: COLOR =3: PLOT XB,YB
310 IF PEEK (512+(YA+1)*32+XA)=128 THEN GOTO 400
320 IF PEEK (512+(YA-1)*32+XA)=128 THEN GOTO 400
330 IF PEEK (512+YA*32+XA+1)=128 THEN GOTO 400
340 IF PEEK (512+YA*32+XB-1)=128 THEN GOTO 400
350 RFLAG=1
400 IF PEEK (512+(YB+1)*32+XB)=128 THEN GOTO 450
410 IF PEEK (512+(YB-1)*32+XB)=128 THEN GOTO 450
420 IF PEEK (512+YB*32+XB+1)=128 THEN GOTO 450
430 IF PEEK (512+YB*32+XB-1)=128 THEN GOTO 450
440 LFLAG=1
450 IF RFLAG<>1AND IF LFLAG<>1 THEN GOTO 40
460 IF RFLAG=1AND IF LFLAG<>1 THEN PRINT "RED WINS": GOTO 510
470 IF LFLAG=1AND IF RFLAG<>1 THEN PRINT "BLUE WINS": GOTO 510
480 PRINT "NOBODY WINS": GOTO 530
510 MUSIC "104060#1 6 #100"
520 STOP
530 MUSIC "-/50000 -/1000000"
540 END

```

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BOODLE

.. .. . from JOSEPH MIRABITO

```

10 A=B193: POKE A,60
12 POKE A+1,158
13 REM SETUP SHAPES IN SHAPE TABLE
14 B=512: GOSUB 100: GOSUB 105
16 B=544: GOSUB 101: GOSUB 106
18 B=576: GOSUB 100: GOSUB 106
20 B=608: GOSUB 101: GOSUB 105
22 B=640: GOSUB 101: GOSUB 105
24 B=656: GOSUB 100: GOSUB 106
26 B=672: GOSUB 101: GOSUB 106
27 REM FILL-IN NON-STANDARD SHAPES
28 POKE 522,85: POKE 570,85
30 POKE 586,5: POKE 602,84

```

0000LE (continued)

```
32 POKE 618,84: POKE 634,5
34 POKE 650,85: POKE 666,85
36 POKE 682,5: POKE 698,84
40 REM CLEAR SCREEN WITH GREEN FIELD
42 FOR X=0 TO 383
44 POKE X,1: NEXT X
46 REM PLACE CURSOR IN CENTER OF SCREEN
46 P=176
47 REM CHANGE COLOR GRDP OF CURRENT CURSOR POSITION
48 POKE P,(PEEK (P)+64)
49 REM IF A KEYBOARD KEY IS PRESSED RETURN TO BASIC MONITOR
50 IF ASC (KEY$(0))=0 THEN 54
52 POKE A,52: POKE A+1,30: END
53 REM GET A KEY FROM THE RIGHT HAND CONTROL
54 K=ASC (KEY$(1))
55 REM RETURN TO CHECK BOTH KEYBOARDS IF NO KEY PRESSED
56 IF K=0 THEN 50
57 REM IF KEY IS AN NUMBER KEY BRANCH
58 IF K<45 THEN 80
59 REM DIRECTION KEY,DECODE AND MOVE CURSOR
60 IF K=69 THEN I=1: GOTO 68
62 IF K=78 THEN I=-32: GOTO 68
64 IF K=83 THEN I=32: GOTO 68
66 I=-1
67 REM CHECK IF NEW POSITION IS WITHIN FIELD
68 K=P+I: IF K<0 THEN 50
70 IF K>382 THEN 50
71 REM CHANGE COLOR OF OLD CURSOR, PLAY ANOTE, AND UPDATE CURSOR
72 POKE P,(PEEK (P)-64)
74 P=K: MUSIC "I": GOTO 48
79 REM DECODE THE NUMBER KEY TO A SHAPE
80 IF K=63 THEN I=10: GOTO 84
82 IF K=33 THEN I=11: GOTO 84
84 I=K-48
85 REM PLACE THE NEW SHAPE, PLAY A NOTE AND RETURN FOR NEW KEY
86 POKE P,I: MUSIC "7": GOTO 48
99 REM GET THE UPPER ROW OF DOTS IN TWO ROWS IN SHAPE TABLE
100 C=0: GOTO 102
101 C=4
102 FOR X=0 TO 10
103 POKE B+X,C: POKE (B+X+16),C
104 NEXT X: RETURN
105 C=0: GOTO 107
106 C=4
107 FOR X=11 TO 15
108 POKE B+X,C: POKE (B+X+16),C
109 NEXT X: RETURN
```

Other Special News:

Protecto Enterprises apologizes for delays in shipping orders. Their objective is always to ship the following day after an order is placed and to give two to seven days delivery on phone orders anywhere in the USA.

The problem on delayed orders was caused when the 28 below zero weather hit the New York area. It froze the water main on the third floor of the warehouse where the 23K IM-1 computers and peripherals were stored on the first floor. This completely flooded the first floor and ruined all the computers and peripherals. We had to bring in all new merchandise to replace the computers causing a 60 to 90 day delay. At the same time we sold out all the computers (several thousand) we planned for this sale! (We planned this sale for six months and sold out in 30 days.)

We are now shipping all orders. We are shipping about two weeks later than we promised. We still have not been able to get any peripherals and do not expect to be able to ship peripherals back orders before June 1, 1982. (BUILDING BLOCKS-RAM CARTRIDGES- R1232 CARTRIDGES-DISKS) SERVICE MANUAL!

We do have all the programs in stock we show on our price list as they were stored in another warehouse and were not affected by the flood. There are a lot of good programs available from other firms, and we will advise club members of these programs in future club letters.

So please have patience. We are dedicated to giving APF IM-1 owners the best possible service and continued program support.

P.S. WE NEED PROGRAMS AND SUGGESTIONS FROM  
YOU TO MAKE OUR CLUB SUCCESSFUL!!



APF-IM-1 OWNERS

SANTA CLAUS SALE!!

LIMITED QUANTITIES - ENDS 12-25-82

1. ALL TAPE PROGRAMS AND CARTRIDGES 1/2 PRICE!

Now you can afford to give your computer a Christmas present,  
(Get the complete library of tapes and cartridges available)

2. ALL EXPANSION PERIPHERALS ONLY \$49.50 EACH

Building Block! BK RAM Cartridges! RS232 Cartridges!  
F1 100 Disk Interface Cartridges!

3. FLOPPY DISK DRIVE ONLY \$299.00

(While they last!)

4. ALL NEW 1983 COMPUTER CLUB

A. New name "IM-1 in a Million"

B. New Club President - Milly Brewer  
P. O. Box 1411, Springdale, Arkansas 72764

C. Guaranteed delivery - will refund \$1 for any month you  
don't get your club letter.

D. Money back guarantee. You can cancel any time and be  
refunded \$1 per month you don't get the club letter.

E. Guaranteed clear copies - If you can't read the club  
letter we'll refund \$1 for any issue.

F. Monthly - technical and service articles!

G. EARLY CLUB MEMBERSHIP SIGN UP BONUS \$5.00 - If you submit  
your new 1983 club application and fee direct before  
12-25-82 to Milly Brewer (new 1983 president) you pay  
only \$10.00 instead of the regular \$15.00 annual fee.

DON'T MISS THIS SALE - REMEMBER LIMITED QUANTITIES ARE AVAILABLE!

(See other side for 1983 Club Application)

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**IM-1      MILLION**

171 2

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**Club Member**

AT THE END OF THE CURRENT SUBSCRIPTION YEAR THE NATIONAL IMAGINATION COMPUTER CLUB WILL BECOME THE 'IM-1 IN A MILLION' UNDER TOTALLY NEW MANAGEMENT.

THE NEW POLICY IS TO UPGRADE EVERYTHING THAT HAS GONE BEFORE. THE 'IM-1 IN A MILLION' WILL MAINTAIN THE MINIMUM OF 10 PAGES PER ISSUE, ISSUED MONTHLY, HOPEFULLY, AS SUBSCRIBERS CONTACT US, EVEN MORE. WE'LL TRY TO CONTINUE THE CLUB DISCOUNT (DEPENDING ON FACTORY) AVAILABILITY) ON BOTH HARDWARE AND SOFTWARE, AS NEW ITEMS BECOME AVAILABLE WE'LL ADD THEM TO OUR LIST.

OF COURSE WE'LL KEEP PRINTING FREE PROGRAMS WRITTEN BY OWNERS SPECIFICLY FOR THE IM-1. WE PROMISE TO PERSONALLY ANSWER EVERY LETTER YOU WRITE.

SOME NEW DEPARTMENTS HAVE BEEN ADDED, SO LOOK FOR THEM IN THE FIRST ISSUE, JAN 1983.

ADDED: THE WANT ADS: HERE IS A PLACE FOR SUBSCRIBERS TO BUY AND SELL PROGRAMS, USED EQUIPMENT OR ANY ASSOCIATED MATERIALS (COST MINIMAL).

ADDED: MAINTENANCE AND REPAIR ADVICE PLUS INFORMATION ON ANY UPGRADES IN THE FUTURE.

WHETHER YOU USE YOUR MACHINE FOR HOME, BUSINESS OR ENTERTAINMENT, WE WILL HAVE SOMETHING FOR YOU.

REMEMBER, SUBSCRIBE NOW FOR 1983 FOR ONLY \$10.00, AFTER DEC 25, 1982 THE RATE GOES BACK TO \$15.00. WE WILL GIVE YOUR MONEY BACK ANYTIME YOU ARE NOT COMPLETELY SATISFIED WITH THE CLUB LETTER, PRORATED OF COURSE!

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**IM-1      MILLION**

171 2

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**Club Member**

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**MEMBERSHIP APPLICATION**  
FOR 1983

1-1-83 to 12-31-83

NAME=-----

STREET ADDRESS=-----

CITY=-----

STATE=-----ZIP=-----

ENCLOSED IS MY \$ 10.00 FEE (SPECIAL PRICE)

MAIL TO: EDITOR  
MILLY BREWER  
P.O.BOX 1411  
SPRINGDALE,  
ARKANSAS 72764

**APF****FANTASTIC!****SANTA CLAUS SALE!!**  
(GIVEAWAY PRICES!)**Product Catalog  
and Price List**  
UNTIL 12-25-82**LIMITED  
QUANTITIES!!****COMPUTER PRODUCTS**~~January 1, 1982~~

	LIST PRICE	SANTA SALE FACTORY PRICE
<b>23K APF IM-1 COMPUTER.</b> Includes 14,000 Bytes ROM with BASIC built in, 9000 Bytes User RAM, Color, Sound. Professional 53 keyboard, Two controllers, Two 10 key numeric pads, High speed cassette, A. C. adapter, R. F. Modulator, T.V. switch box. Accepts TAPE-DISK-PLUG in cartridges. It is plug in expandable. 90 days parts and labor warranty, Owners guide, BASIC language manual, Beautiful Black & White Console Case.	\$599.00	\$239.00
<b>23K APF IM-1 COMPUTER FACTORY PACK.</b> Everything you get for \$239.00 plus "BASIC TUTOR program" on two tape cassettes with manual to teach you how to cut programming time, "PROGRAMMING AND TECHNICAL ASSISTANCE MANUAL" for Graphics, Machine Language-Memory maps, Schematics and Parts List. Also you get the popular "SPACE DESTROYERS Program."	698.00	289.00
<b>88-1 BUILDING BLOCK INTERFACE.</b> This plug to interface allows you to use the 23K IM-1 computer to its fullest degree. It contains 4 universal ports to add: RAM memory, Printers, Telephone Modem, and Floppy Disk drives. (5.00 shipping)	199.00	<del>249.50</del> 49.50
<b>88-RAM EXPANSION.</b> Plug into interface port to increase your RAM memory 8192 Bytes. (3.00 shipping)	129.00	<del>149.50</del> 49.50
<b>SI-232 SERIAL INTERFACE.</b> Plug in to interface port to connect printers and telephone modems. (3.00 shipping)	149.00	<del>169.50</del> 49.50
<b>MX-80 EPSON LINE PRINTER.</b> Deluxe quality! Impact dot matrix-bi-directional, 40-80-66 132 columns-uses regular paper. (20.00 shipping)	726.00	<del>846.50</del> 120.50
<b>TM-150 TELEPHONE MODEM.</b> Best quality! Transmit receive full duplex, switches! Originate-off-answer. (4.00 shipping)	199.00	<del>219.50</del> 19.50
<b>F1-100 DISK INTERFACE.</b> Plug into interface port - allows you to connect the Floppy disk drive. (3.00 shipping)	149.00	<del>169.50</del> 49.50
<b>D-100 MINI FLOPPY DISK DRIVE.</b> Plugs into interface - has its own power supply and controller - uses no RAM memory, give you 72,000 Bytes of additional data storage, plus instant loading and accessing of data. (7.50 shipping)	599.00	<del>679.50</del> 249.50

**PROGRAMMING AND LANGUAGE AIDS**

	FACTORY PRICE	SANTA SALE FACTORY PRICE
<b>BASIC TUTOR.</b> This program includes two cassette tape programs with a 243 page manual - Teaches you how to use the simplified Level II BASIC cuts programming time - a must for beginners and professionals.	49.95	<del>59.95</del> 19.95
<b>PROGRAMMING AND TECHNICAL ASSISTANCE MANUAL.</b> 100 pages, graphics, memory maps, machine language, schematics, and parts list.	19.95	<del>29.95</del> 9.95
<b>6800 MACHINE LANGUAGE EDITOR AND ASSEMBLER.</b> This disk program is used to create source code file - this file is then used as the assembler - simplifies entry or editing, adding, deleting, change in lines, etc.	59.95	<del>69.95</del> 19.95
<b>6800 MACHINE LANGUAGE DISASSEMBLER.</b> This disk enhances creation, debugging, and recording of machine language.	19.95	<del>29.95</del> 9.95
<b>DISK COPIER PROGRAM.</b> Allows you to make duplicate copies of all disk programs written for the APF-IM-1.	19.95	<del>29.95</del> 9.95
<b>NATIONAL COMPUTER CLUB MEMBERSHIP.</b> Allows special discount prices - 1983 year programming assistance-new developments-program exchange-factory sponsored. 12-15%		<del>15.00</del> 15.00

We ship C.O.D., Honor Vias and  
MASTER CARDS

- \*Add \$15.00 for shipping - if  
C.O.D., add \$5.00 more.  
\*Add \$3.00 for postage - if  
C.O.D., add \$2.00 more.

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ENTERPRISES**

(FACTORY DIRECT RELIABILITY)

BOX 565, BARRINGTON, ILLINOIS 60010 - Phone 312/382 5244 to order

**UNTIL 12-25-82  
LIMITED QUANTITIES!**

**MANAGEMENT PROGRAM TAPES**

**ELECTRONIC FILES** This is a computer filing system that allows you to keep track of names, addresses, and other records.

**FACTORY  
PRICE**

**SANTA  
SALSA  
MODULE  
PRICE**

**BAR CHARTS** Color charts for comparisons, year to year category by category - See your situation at a glance!

**TYPING TUTOR** Learn typing at your own speed-unique program-Computer designs and changes to fit your ability.

**CHECK BOOK BUDGET MANAGER** Faster way to balance your check book- Balance your budget - Keep tax records, etc!

**BUDGET MANAGER** Day by day, week by week, 3 categories, including food, medical, automotive - even summary reports.

**PERSONAL BUSINESS MACHINE** Calculate loans, interest, principle payments, loan payments, etc.

**BILLBOARD** Great for creating messages in sound, color, and graphics with a beautiful display.

**SPACE SIZE AND SURFACE GUIDE** Great for home improvements, figure your material needs - How much Paint - Carpeting - Fertilizer, etc.

**MATH TUTOR** Great for improving math skills at any age level, based on personal ability - a private tutor with lots of fun.

**THE WORD FACTORY** A spelling game that's fun - spell name of object pictured - great to improve your kids spelling skill and adult too!

**SPELLING DUEL** Challenging and educational. Great fun with combination spelling and crossword game!

**JUMBLED UP THINGS** Create words from jumbled up letters against the clock - Great educational program to improve your memory.

**PERCEPTION** Learning game - Two players any level compete - Improves your ability to solve problems.

**ARTIST AND EASEL** Great color art program for those who like to paint, doodle - Save your masterpiece - Use your imagination.

**MUSIC COMPOSER** Practice on keyboard, select key and tempo, write a tune and record it.

**SPACE DESTROYERS** The most popular space game played - Hold off the invaders, save the earth from destruction!

**FACTORY  
PRICE**

**SANTA  
SALSA  
MODULE  
PRICE**

**GAME CARTRIDGES**

**HANDMAN** Tic-Tac-Toe, Doodle. Two competitive games, plus the electronic art of Doodle.

**U.F.O.** Shoot-a-Lot, Sea Monsters, Break-it-Down. Two great adventures in space and the deep, and two challenging carnival games.

**SHOOTING GALLERY** Brickdown-it takes smart shooting to get all bricks, and a steady aim.

**PINBALL** Blockout, Dungeon Hunt, Electronic flippers and tricky ball speed changes in pinball. In Dungeon, search and score.

**CASINO** Roulette, Keno, Slot Machine. All games are played by the real Las Vegas rules. Even has the authentic sounds of the casino, too!

**BLACK JACK** Great practice! You'll really clean up at the real thing! Smart decisions, not always luck, determine if you beat the machine.

**BASEBALL** The Great American pastime can still be great - even when the weather isn't.

**BOXING** Features 2 boxers battling toe to toe like Dempsey and Firpo! 5 variations.

**BACKGAMMON** This ancient game has never been more popular - and it really comes to life in all the colors of your TV screen.

**CATENA** Surround your opponent, but watch out for the last minute reverses

**WARRANTY - 90 DAYS PARTS AND LABOR** If unit fails within 90 days of purchase, send unit and sales receipt prepaid via United Parcel Service to PROTECTO ENTERPRISES at address shown. We will ship you a replacement unit within 48 hours of receipt prepaid.

**SERVICE MANUAL** Detailed service instructions and pictures for those who wish to service their computer. (not available)

19.95

14.95